

Claims:

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13. (Amended) An optical wave guide having at least one plastic optical fibre comprising a plastic optical fibre core, a fluorine-containing fibre cladding and a protective sheath self-adhesively applied to said at least one plastic optical fibre, wherein said protective sheath ~~comprising~~ comprises polymeric compounds selected from the group consisting of modified polyamides, modified copolyamides and mixtures thereof having a melting point less than 220°C a concentration of amino terminal groups between 50 and 300 µeq/g and a maximum concentration of carboxyl terminal groups no greater than 15 µeq/g.

14. (Amended) An optical wave guide according to claim 13 wherein said polymeric compounds have a meeting point of less than 210°C.

15. (Amended) An optical wave-guide according to claim 13 wherein said modified polyamides are selected from the group consisting of modified PA 11, modified PA 12, modified PA 610, modified PA 612 and modified PA 1212.

16. (Amended) An optical wave-guide according to claim 13 wherein said modified copolyamides are selected from the group consisting of modified PA 6/12, modified PA 6/9/6, modified PA 6/9/12, modified PA 610/6, modified PA 610/11, modified PA 610/12, modified PA 612/6, modified PA 612/11, modified PA 612/12 and mixtures thereof.

17. (Amended) An optical wave guide according to claim 13 wherein at least one modified polyamide, modified copolyamide or mixture comprises modified PA 12.

18. (Original) An optical wave-guide according to claim 15 wherein the concentration of amino terminal groups is between 90 and 250 µeq/g.

19. (Original) An optical wave-guide according to claim 13 wherein said protective sheath further comprises at least one additive selected from the group consisting of UV stabilizers, heat stabilizers, crystallization promoters, softeners, flame retardants, external lubricants and inorganic fillers.

20. (Original) An optical wave-guide according to claim 13 wherein said plastic fibre core is formed from polymethymethacrylate.

21. (Original) An optical wave-guide according to claim 13 wherein said plastic optical fibre has an outer diameter of between approximately 75 and approximately 3000  $\mu\text{m}$ .

22. (Amended) An optical wave-guide according to claim 13 wherein the thickness of the fluorine-~~containing~~ containing fibre cladding is between 5 and 10  $\mu\text{m}$ .

23. (Amended) A protective sheath for an optical wave guide having at least one plastic optical fibre comprising a plastic optical fibre core and a fluorine-containing fibre cladding, said sheath comprising polymeric compounds selected from the group consisting of modified polyamides, modified copolyamides and mixtures thereof having a melting point of less than 220°C a concentration of amino terminal groups between 50 and 300  $\mu\text{eq/g}$  and a maximum concentration of carboxyl terminal groups no greater than 15  $\mu\text{eq/g}$ .

24. (Amended) A protective sheath according to claim 23 wherein said polymeric compounds have a meeting point of less than 210°C.

25. (Amended) A protective sheath according to claim 23 wherein said modified polyamides are selected from the group consisting of modified PA 11, modified PA 12, modified PA 610, modified PA 612 and modified PA 1212.

26. A protective sheath according to claim 23 wherein said modified copolyamides are selected from the group consisting of modified PA 6/12, modified PA 6/9/6, modified PA 6/9/12, modified PA 610/6, modified PA 610/11, modified PA 610/12, modified PA 612/6, modified PA 612/11, modified PA 612/12 and mixtures thereof.

27. (Amended) A protective sheath according to claim 23 wherein at least one modified polyamide, modified copolyamide or mixture comprises PA 12.

28. (Original) A protective sheath according to claim 23 wherein the concentration of amino terminal groups is between 90 and 250  $\mu\text{eq/g}$ .

29. (Original) A protective sheath according to claim 23 wherein said protective sheath further comprises at least one additive selected from the group consisting of UV stabilizers, heat stabilizers, crystallization promoters, softeners, flame retardants, external lubricants and inorganic fillers.

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